

## INTERNET DOCUMENT INFORMATION FORM

**A . Report Title:** China U.S. and European Union Arms Sales Since the 1989 Embargoes

**B. DATE Report Downloaded From the Internet** June 1998

**C. Report's Point of Contact: (Name, Organization, Address, Office Symbol, & Ph #**

United States General Accounting  
National International Affairs Division  
Washington, DC 20548

**D. Currently Applicable Classification Level:** Unclassified

**E. Distribution Statement A:** Approved for Public Release

**F. The foregoing information was compiled and provided by:**  
**DTIC-OCA, Initials:**\_\_JC\_\_ **Preparation Date:**12 June 1998

The foregoing information should exactly correspond to the Title, Report Number, and the Date on the accompanying report document. If there are mismatches, or other questions, contact the above OCA Representative for resolution.

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## Testimony

Before the Joint Economic Committee

For Release on Delivery  
Expected at  
10:00 a.m., EDT  
Tuesday,  
April 28, 1998

## CHINA

# U.S. and European Union Arms Sales Since the 1989 Embargoes

Statement of Harold J. Johnson, Associate Director,  
International Relations and Trade Issues, National  
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Mr. Chairman and Members of the Committee:

I am pleased to be here today to discuss the status of the arms embargoes imposed on China by the European Union (EU) and the United States following the 1989 massacre of demonstrators in Beijing's Tiananmen Square. Specifically, I will discuss (1) the terms of the EU and U.S. embargoes, (2) the extent of EU and U.S. sales of military items to China since 1989, and (3) the potential role that such items could play in addressing China's defense needs.

As you requested, we developed information regarding EU and U.S. arms sales to China; and did not assess China's military modernization efforts.<sup>1</sup> However, these efforts are the context for China's arms imports. In 1985, China adopted a military doctrine that emphasizes the use of modern naval and air power in joint operations against regional opponents. It later began buying foreign military hardware to support its new doctrine. The 1989 Tiananmen Square massacre ruptured China's growing defense relationships with the United States and the European Union.<sup>2</sup> Since then, China has relied heavily on other nations, such as Russia, for its military hardware imports—although it is impossible to know the extent to which China's import patterns would have been different had the Tiananmen massacre not occurred.

Before I begin, I should emphasize that we focused on military items—that is to say, items that would be included on the U.S. Munitions List. As you know, this list includes both lethal items (such as missiles) and nonlethal items (such as military radars) that cannot be exported without a license. We did not address exports of items with both civil and military applications because the embargoes do not bar the sale of such “dual-use” items to China, although experts believe that dual-use imports are an important source of high technology for the Chinese military. Also, I should note that the information presented in this statement was developed from open data sources and, therefore, its completeness and accuracy may be subject to some degree of uncertainty.

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<sup>1</sup>For a fuller discussion of China's military, see our report entitled National Security: Impact of China's Military Modernization in the Pacific Region (GAO/NSIAD-95-84, June 6, 1995).

<sup>2</sup>In 1989, the European Union consisted of Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, and the United Kingdom. Austria, Finland, and Sweden have since become EU members.

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## Summary

The EU embargo consists of a 1989 political declaration that EU members will embargo the "trade in arms" with China. Each EU member may interpret and implement the embargo's scope for itself. We found no instances of EU members entering into new agreements to sell China lethal military items after 1989, although some members delivered lethal and nonlethal military items to China during the 1990s—apparently in connection with pre-embargo agreements—and have more recently agreed to deliver additional nonlethal military items. According to experts, the embargo is not legally binding and any EU member could legally resume arms sales to China if it were willing to bear the political consequences of doing so. We noted that at least two EU members are presently reconsidering whether the EU embargo should be continued.

In contrast to the EU embargo, the U.S. embargo is enacted in U.S. law and bars the sale to China of all military items—lethal and nonlethal—on the U.S. Munitions List. The President may waive this ban if he believes that doing so is in the national interest. Since 1989, the President has issued waivers to (1) allow the delivery to China of military items valued at \$36.3 million to close out the U.S. government's pre-1989 defense agreements with China and (2) license commercial military exports valued at over \$312 million—primarily commercial satellite and encryption items.

The rather small amount of EU and U.S. sales of military items to China since 1989 could help address some aspects of China's defense needs; however, their importance to China's modernization goal may be relatively limited because Russia and the Middle East have provided almost 90 percent of China's imported military items during this period. According to experts with whom we spoke, China must overcome obstacles posed by its military's command and control, training, and maintenance processes before it can fully exploit such items.

Recent U.S. executive branch actions suggest that its view of China's human rights record—the basis for the embargo in the first place—may be changing. In light of the possible weakening of support for continuing the embargo by some European governments, the question facing the U.S. government appears to be how the United States should respond if the EU embargo were to erode significantly in the near future.

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## EU Military Exports to China Have Been Limited

In reaction to the Tiananmen Square massacre, the European Council—an EU decision-making body comprised of ministers from EU member countries—imposed several sanctions in June 1989, including "an embargo on trade in arms with China." However, according to experts, the Council's

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declaration was not legally binding. It also did not specify the embargo's scope. For example, it did not state whether the embargo covers all military articles, including weapons platforms, nonlethal military items, or components.

EU and other European officials told us that the European Union has left the interpretation and enforcement of the declaration to its individual member states<sup>3</sup> and that the members have interpreted the embargo's scope in different ways. Officials in some EU nations informed us that their nations have embargoed the sale of virtually all military items to China. In contrast, the United Kingdom's interpretation of the EU embargo does not bar exports of nonlethal military items, such as avionics and radars. The UK embargo is limited to lethal weapons (such as bombs and torpedoes), specially designed components of lethal weapons, ammunition, military aircraft and helicopters, warships, and equipment likely to be used for internal repression. European and EU officials told us that EU members tried during the early 1990s to develop a detailed EU-wide interpretation of the embargo's scope. These attempts apparently fell short and resulted only in the members' mutual recognition that they were not selling China lethal weapons.

According to EU and European officials, the EU embargo could be formally ended by unanimous consent or informally eroded by individual EU members' resumption of military trade with China. EU members, whose defense firms are faced with severe economic pressures, could move to modify their participation in the embargo if they believe China's human rights situation is improving. A recent EU report noted that human rights in China, while still far from meeting international standards, had improved over the past 20 years. There have been signs that some EU members have sought to increase military sales to China. We found that at least two EU members are now reassessing whether the embargo should be continued.

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## EU Sales of Military Items to China Since 1989

As of today, no EU members appear to have concluded new agreements to sell lethal weapons to China since the imposition of the EU embargo. As shown in table 1, three EU members have delivered, or agreed to deliver, military items to China since 1989.

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<sup>3</sup>EU officials informed us that this reliance on the EU members reflects the members' independence in defense matters.

**Table 1: Deliveries of EU Military Items to China, 1990-97**

Country	System	Lethal	Agreement date
France	Castor-2B naval fire control radar	No	Pre-1989
	Crotale ship-to-air missile and launcher	Yes	Pre-1989
	TAVITAC naval combat automation system	No	Pre-1989
	Sea Tiger naval surveillance radar	No	Pre-1989
	AS-365N Dauphin-2 helicopter	No	Pre-1989
	SA-321 Super Frelon helicopter	No	Pre-1989
Italy	Aspide air-to-air missile	Yes	1989 <sup>a</sup>
	Electronic countermeasures for A-5M aircraft	No	Pre-1989
	Radar for F-7M and F-7MP fighters	No	1993
United Kingdom	Avionics for F-7M fighter	No	1989 <sup>b</sup>
	Searchwater airborne early warning radar (no deliveries to date)	No	1996

<sup>a</sup>According to the source of the information, this agreement's exact date is unclear.

<sup>b</sup>This agreement appears to have been concluded prior to June 1989.

Sources: Stockholm International Peace Research Institute, various other public sources.

Two EU member states delivered lethal weapons to China after the embargo, according to publicly available sources of information. These deliveries of French Crotale ship-to-air missiles and Italian Aspide air-to-air missiles appear to have been made in connection with pre-embargo agreements. Similarly, French-licensed Chinese production of the Super Frelon and Dauphin helicopters, which continued into the 1990s, began prior to 1989. Also, the United Kingdom honored a pre-embargo agreement by providing China with radars, displays, and other avionics for its F-7M fighter aircraft.

During the 1990s, Italy and the United Kingdom agreed to sell China nonlethal military items. Italy agreed to sell fire control radars for use on Chinese F-7M and F-7MP export fighters. The United Kingdom agreed to sell China the Searchwater airborne early warning radar system. UK officials informed us that the decision to do so is consistent with the U.K. interpretation of the EU embargo because the Searchwater is not a lethal weapon or a weapons platform. (The appendix briefly describes the systems in table 1.)

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## Waivers Have Allowed Exports of Some U.S. Military Items to China

On June 5, 1989, immediately after the massacre of pro-democracy demonstrators at Tiananmen Square, the President announced sanctions on China to protest its actions. In February 1990, Congress codified the sanctions' prohibition on weapon sales in Public Law 101-246. The law suspended export licenses for items on the U.S. Munitions List and specifically barred the export of U.S.-origin satellites for launch on Chinese launch vehicles. It exempted from this prohibition U.S. Munitions List items that are designed specifically for use in civil products (such as internal navigation equipment for commercial airliners) unless the President determines the end user would be the Chinese military. Because the U.S. Munitions List includes nonlethal military equipment (for example, radios and radars) in addition to lethal equipment (such as missiles), the U.S. prohibition on arms sales to China covers a broader range of items than the EU embargo, as implemented.<sup>4</sup>

Under the law, Munitions List items can be exported to China if the President reports to Congress that it is in the national interest to allow the export.<sup>5</sup> Presidents Bush and Clinton exercised this option and issued waivers for exports of Munitions List and satellite equipment to China based on determinations that doing so was in the national interest.<sup>6</sup>

U.S.-China relations have slowly improved since the 1989 massacre. According to press reports, the executive branch is now considering easing restrictions on commercial satellite projects in China—in part through the use of blanket waivers. Moreover, for the first time in several years, the United States recently decided against sponsoring a United Nations resolution condemning China's human rights.

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## Sales of Munitions List Items to China Since 1989

The United States has delivered or licensed for export to China almost \$350 million in Munitions List equipment since 1990. These exports were made through (1) government-to-government agreements managed by the Department of Defense (DOD) under the Foreign Military Sales Program and (2) commercial exports licensed by the State Department, the majority of which were related to launches of U.S.-origin satellites in China. All

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<sup>4</sup>The Munitions List can also include dual-use items if they are specifically designed, developed, configured, adapted, or modified for military application and have significant military or intelligence applicability such that controlling them as munitions is necessary.

<sup>5</sup>The law also allows the President to lift the sanctions if he reports to Congress that China has made progress on a program of political reform covering a range of issues, including human rights.

<sup>6</sup>Since 1990, many items once controlled on the Munitions List have been moved to Commerce Department control and are therefore no longer subject to U.S. sanctions barring their export to China. In 1992, many items were moved as part of a larger rationalization process.

were authorized under presidential waivers declaring the export to be in the national interest or were specifically exempted from the sanctions under the law.

## Government-to-government Sales

In December 1992, President Bush issued a waiver stating that it was in the national interest to allow the export of military equipment in order to close out four government-to-government military assistance programs that had been suspended by the sanctions. The waiver stated that these deliveries would not significantly contribute to China's military capability and closing these cases would improve the prospects for gaining further cooperation from China on nonproliferation issues. The total value of these exports, which are shown in table 2, was about \$36.3 million.

**Table 2: U.S. Government Exports of Munitions Items to China, 1990-97**

Dollars in millions

Program	Description	Deliveries
Peace Pearl - F-8 modernization	Provide modern avionics for China's F-8 fighters.	Two modified F-8 fuselages, four avionics kits, and related equipment.
MK-46 Mod 2 torpedoes	Provide four torpedoes for test and evaluation purposes with ultimate deployment on Chinese Navy ships and helicopters.	Four torpedoes, including spares and related test and maintenance equipment.
Artillery locating radars	Provide four AN/TPQ-37 "Firefinder" counter-artillery radar systems.	Two AN/TPQ-37 radars, including parts and support equipment. Two of these radars had been shipped before the sanctions.
Large-caliber artillery plant	Provide production capability for large-caliber artillery munitions.	Miscellaneous components. Major equipment was shipped prior to the sanctions.

These programs were in various states of completion when U.S. sanctions prohibited further assistance or deliveries. No new government-to-government agreements have been opened since 1990. There are now no open or unfulfilled agreements pending between the U.S. government and China under the Foreign Military Sales Program.

The equipment ending these programs was delivered to China between 1993 and 1995. It included four MK-46 Mod 2 torpedoes, spare parts, maintenance, and test equipment. The Chinese Navy was to test the torpedoes for use on its ships and helicopters.



## Commercial Exports of Munitions List Items

The Department of State has approved for export to China about \$313 million in Munitions List items since 1990.<sup>7</sup> As shown in table 3, \$237 million of these exports involved launches of U.S.-origin satellites from China.

**Table 3: Approved U.S. Commercial Export License Applications for Munitions List Equipment to China, January 1990-April 1998**

Dollars in millions

Waiver requirement	Munitions List Items	Value
Approved export licenses for Munitions List items requiring a presidential waiver for export to China	Satellites and related equipment	\$237.0
	Encryption for civil applications or satellites	63.1
Approved export licenses for items not covered by U.S. sanctions	Munitions List equipment for inclusion in civil products (e.g., inertial navigation gear for civil airliners)	12.7
<b>Total</b>		<b>\$312.8</b>

Note: Values represent figures provided on the export applications, not the value of actual shipments. In practice, the value of actual exports is often less.

The President determined that allowing these exports was in the national interest. According to State officials, since 1990, 11 presidential waivers have been issued removing export restrictions on 21 satellite projects. Presidential waivers were also granted to permit the export of encryption equipment controlled on the Munitions List.

Since 1990, over \$12 million in export licenses have been approved for Munitions List equipment designed for inclusion in civil products. These exports are not prohibited under U.S. sanctions and therefore do not require a presidential waiver. The majority of these exports involve navigational electronics used in commercial airliners operated in China.

Between 1992 and 1996, control over exports of commercial encryption equipment and commercial satellites was moved from the Munitions List to the Commerce Department's Commodity Control List. Since U.S. sanctions restrict Munitions List exports and do not prohibit the export of dual-use items, commercial encryption equipment can now be exported to China without a presidential waiver. U.S.-origin commercial satellites,

<sup>7</sup>State also denied, or returned without action, export license applications valued at over \$1 billion.

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however, though no longer on the Munitions List, are covered by the law, and exports still require a presidential waiver.<sup>8</sup>

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## China's EU and U.S. Military Imports Could Help Address Some Defense Needs

The small amount of EU and U.S. military item sales to China since 1989 could help address some of China's defense needs. However, their importance to China's modernization goal is overshadowed by the much larger amounts of military equipment provided by Russia and the Middle East. Moreover, before China can fully exploit such items, it must overcome obstacles in its military's command and control, training, and maintenance.

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## Chinese Use of EU and U.S. Military Items

China has used French helicopters to reinforce its weak antisubmarine warfare capabilities. According to open sources, China has imported or built under license between 65 and 105 modern French turbine-powered helicopters, including about 40 after 1989. The helicopters include the SA-321 Super Frelon (built as the Z-8) and the AS-365 Dauphin-2 (built as the Z-9). China's Navy has adapted 25 of these helicopters to serve as its antisubmarine warfare helicopter force and equipped some with antisubmarine torpedoes. Several Chinese naval vessels carry the Z-9 helicopter. China's Army has also tested the Z-9 helicopter with ground-attack equipment, including antitank missiles.

According to experts, China's only effective ship-to-air missile is the French Crotale missile system. China has deployed the Crotale on four ships, including its two most modern destroyers.<sup>9</sup> Also, China has reverse-engineered the Crotale—reducing China's dependence on foreign suppliers. Similarly, China has reportedly reverse engineered the Italian Aspide air-to-air missile for use as a ship-to-air missile.

China's planned purchase of six to eight British Searchwater airborne radar systems would provide China with some degree of warning against low-flying air attacks as well as help it direct fighter aircraft, detect small

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<sup>8</sup>Other items that have moved from the Munitions List to Commerce's jurisdiction since 1990 include jet engine hot-section technology, commercial global positioning system equipment, and some night vision equipment. See our reports entitled Export Controls: Issues in Removing Militarily Sensitive Items From the Munitions List (GAO/NSIAD-93-67, May 31, 1993); and Export Controls: Change in Export Licensing Jurisdiction for Two Sensitive Dual-Use Items (GAO/NSIAD-97-24, Jan. 14, 1997.)

<sup>9</sup>These ships, however, still lack long-range, ship-to-air missiles.

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vessels, and augment over-the-horizon targeting.<sup>10</sup> China is expected to mount the radars on converted Y-8 transport aircraft.

China could possibly use its four U.S. Mod 2 version MK-46 torpedoes to improve its copy of the Mod 1 version, which China has already deployed on its French helicopters. The early-1970s era Mod 2 has an improved computer that provides it with a re-attack capability. The MK-46 torpedo's range and speed exceed that of China's other western air launched, antisubmarine torpedo—the mid-1970s era Italian Whitehead 244S.<sup>11</sup>

It is unclear whether China has benefited from any of the U.S. commercial satellite transfers. State officials told us that U.S. export licenses for satellite projects in China contain provisos intended to minimize the risk of any unauthorized transfer of sensitive technology. Recent press reports have asserted that, despite these controls, U.S. technology has been transferred to China and has improved the reliability of China's nuclear missiles. We have not examined the security guidelines and control procedures on satellite launches or how they are being implemented.

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### Russia and Middle East Provide Most of China's Modern Military Items

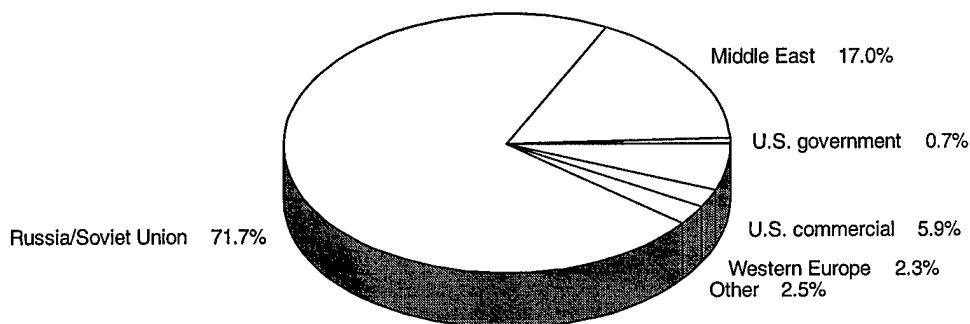
While these EU and U.S. military items could be used to address some modernization needs, they constitute only a small part of the range of military items that China has imported from foreign suppliers since 1989. As shown in figure 1, total EU and U.S. exports constituted less than 9 percent of the military items imported by China during the first 7 years of the embargoes. This share falls to less than 3.4 percent if U.S. exports of commercial satellites and encryption items are excluded.

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<sup>10</sup>The United Kingdom has been reported as offering its Argus airborne warning system to China, although China appears to have chosen an Israeli system.

<sup>11</sup>China acquired the Whitehead in the mid-1980s and has deployed it on helicopters.

**Figure 1: Deliveries of Foreign Military Items to China, 1990-96**



Total value: \$5.3 billion (current-year dollars)

Note: The U.S. commercial share depicted above is based on the value of export licenses granted since 1990, rather than on the value of actual deliveries.

Sources: U.S. Arms Control and Disarmament Agency; the Departments of State and Defense.

Moreover, Russia and Israel have sold or agreed to sell China items that are far more lethal than those sold by EU members, as well as items similar to those obtained from EU members. For example, reported Russian arms agreements include

- two Sovremenniy destroyers, which are more modern than China's domestically produced destroyers and which typically carry advanced supersonic antiship missiles, ship-to-air missiles with a much greater range than the Crotale, and antisubmarine helicopters that are considerably larger than the Z-9 helicopter;
- about 50 Su-27 fighter aircraft—similar to U.S. F-15s—armed with potent air-to-air missiles, and assistance in producing more Su-27s in China;
- about 25 Mi-17 transport assault helicopters; and
- four Kilo diesel electric submarines (including two of a very quiet class that Russia has never before exported) and homing torpedoes.

Israel has helped China with its development of the F-10 fighter aircraft (similar to the U.S. F-16) by providing technology developed for the

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aborted Israeli Lavi fighter project—and of various missiles. It has also offered to sell to China its Phalcon airborne phased array surveillance radar which, if fitted to a Russian airframe, would provide China an airborne warning and command system.

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## China Faces Difficulties in Incorporating Modern Arms

According to experts, China will have to overcome several persistent problems before it can effectively use its imported arms to support its new military doctrine and help reinvigorate its domestic defense industry.

China lacks command and control capabilities needed to effectively integrate its armed forces in the fast-moving joint offensive operations called for by its new doctrine. China's Air Force units are hampered in their ability to communicate with air defense, naval, and ground units. China also lacks a reliable air defense intelligence system. While its future airborne early warning systems will help address this problem, China will still have to learn how to integrate such systems into its air defense system. Experts informed us that military systems integration remains a weakness for China.

China's acquisition of new and advanced military systems will also test its training and maintenance processes. China may have to significantly enhance the training, quality, and education level of its military personnel to use increasingly advanced equipment. Moreover, according to experts, China's Air Force has not yet considered the training implications of its new offensive joint operations doctrine. Chinese pilots fly fewer hours than their Western counterparts and tend to fly less demanding training missions that do not emphasize joint operations. Experts informed us that China's preference for buying relatively small numbers of foreign military systems and skimping on training and maintenance support packages reduces opportunities for its military personnel to become familiar with their new equipment and to augment China's weak maintenance efforts.

This practice of buying limited numbers of foreign systems may reflect China's interest in obtaining foreign arms for reverse-engineering purposes. China has long stressed its need to become self-sufficient in weapons development and less dependent on foreign suppliers. However, despite some successes, China has had a mixed record in reverse-engineering foreign systems. Its efforts to do so are hampered by an inefficient defense sector and by the increasing complexity of modern military systems.

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Mr. Chairman and members of the Committee, this concludes my prepared remarks. I would be happy to answer any questions that you may have.





# Description of Selected European Union Military Items Provided to China, 1990-97

According to various public sources, European Union (EU) member states have delivered, or agreed to deliver, the following items to China since 1989.

- Naval Systems for the Luhu destroyers. France has provided several systems for China's Luhu destroyers, including the Crotale missile system. France first installed the Crotale on its ships in the late 1970s. In 1982, it developed the Crotale variant later provided to China. According to public sources, the Crotale is a short-range (up to 13 kilometers), ship-to-air point defense missile. The system consists of the missile (which can travel at more than twice the speed of sound), a missile director, a missile launcher mounting, a fire control room with supporting electronics, and a console in a combat information center. The missile director uses a Castor radar, as well as infrared and television tracking systems.

Other French equipment on the Luhu destroyers includes the Sea Tiger naval surveillance radar, the Dauphin-2 (Z-9) helicopter (described later), and the TAVITAC combat data system (which is used to integrate the Luhus' various onboard systems).

- Dauphin-2 (Z-9) Helicopter. In 1980, France agreed to allow China to build the AS-365 Dauphin-2 in China as the Z-9 helicopter. The Chinese Navy has equipped Dauphin-2s with sensors, torpedoes, and missiles for use aboard its vessels. The Dauphin-2 is a medium-weight multirole helicopter that is powered by two turbine engines. Capable of carrying 11 passengers and 2 pilots, the Dauphin-2 has a top speed of 140 nautical miles per hour and a range of 410 nautical miles. Composite materials are used in its main and rear rotor blades, and its tail rotor is built into the vertical fin.
- Super Frelon (Z-8) Helicopter. France delivered the SA-321 Super Frelon helicopter to China in 1977 and 1978 and agreed to allow China to build the Super Frelon, under the designation of Z-8, in 1981. The Chinese Navy has used Super Frelons for anti-submarine missions and has equipped them with sensors, torpedoes, and anti-ship missiles. The Super Frelon is a heavy shipboard helicopter that is powered by two turbine engines. It has a top speed of 134 nautical miles per hour and a range of 440 nautical miles. The Super Frelon can carry 27 fully armed troops or 39 unequipped troops.
- Aspide Missile. According to one public source, Italy developed the Aspide from the U.S. Sparrow air-to-air missile. Aspide production began in 1977. The semi-active radar-guided Aspide has a top speed of more than twice the speed of sound and a range of about 7 nautical miles.

- Searchwater Airborne Early Warning Radar. The United Kingdom first deployed the Searchwater aboard its Nimrod aircraft in 1979 and adapted it for use aboard Sea King helicopters during its 1982 war with Argentina over the Falkland Islands. It later developed the Skymaster version of the Searchwater, which it subsequently incorporated into the Searchwater 2 system. According to a public source, the airborne Skymaster uses an I-band transmitter that can operate in (1) a pulse Doppler mode to provide look-down detection of airborne targets and (2) a frequency agile conventional mode to detect ships as well as aircraft flying above the Skymaster. When operating at 10,000 feet, it is capable of detecting (1) fighters and small boats below it at ranges of about 70 nautical miles, (2) bombers flying below it about 100 nautical miles away, and (3) larger vessels about 130 nautical miles away. The radar can store and update data on 100 airborne and 32 surface targets simultaneously.
- F-7M/F-7MP Avionics. The United Kingdom and Italy have provided avionics for the F-7M and F-7MP fighter aircraft. The Soviet Union first authorized China to build the F-7—a variation of the MiG-21 fighter—in 1961. China later developed the F-7M and MP versions for export to other nations, including Pakistan. According to public sources, the United Kingdom provided China with heads-up displays, weapon-aiming computers, and fire control radars for the F-7M. Italy later provided a new fire control radar for the F-7M and F-7MP.